

The Incidence and Types of Occupational Role Stress among University Research Administrators

Christine C. A. Katsapis

Gallaudet University

EDITOR'S NOTE

The purpose of this article was to examine role conflicts among research administrators through the lens of Hansen and Moreland's (2004) "Janus face" of research administration. The construct of Janus, the ancient Roman god who had two faces (one that looked to the future and one to the past) seemed to this researcher to imply natural conflict. Looking back now at 2007/2008 and the data collected, it seems that perhaps the evidence that indicated the presence of role ambiguity stress may have indicated the initial changes we are seeing realized in the profession of research administration today.

Since that study was conducted, there has been an increasing amount of specialization in the field. Numerous new master's degree programs in research administration have led to a more commonly understood curricula for the profession. NCURA held its first pre-award research administration conference in 2007—there have been five since then. Research "development" is becoming known as the pre-cursor to pre-award. There has been an increased emphasis on the role of research administrators in ensuring the integrity of the research enterprise and assuring the public trust in research at institutions of higher education and teaching hospitals. However, one aspect of this study that this researcher believes remains a constant is that despite the diversity of the profession and its structures, research administrators continue to have much in common due to their shared professional values. Hopefully this retrospective will provide the opportunity to consider some of the natural stresses that comes from a growing profession and its role within the institutions it serves.

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ABSTRACT

This study explored the types of stressors prevalent in the self-reports of university research administrators (URAs) and examined whether or not the degree or type of role stress was influenced by: a) the affiliation of their office unit within their institution, or b) their type. Randomly selected members of NCURA were invited via e-mail to participate in an on-line survey. The Occupational Stress Inventory-Revised (OSI-R) Occupational Roles Questionnaire (ORQ) (Osipow, 1998) was administered with additional questions about the URAs' professional characteristics. The study revealed that role ambiguity was present at a level indicating a high probability of maladaptive stress and/or debilitating strain. Role overload was present at mild levels. Lastly, type, office unit organizational affiliation, and years of experience did not influence the occupational stressors reported. Overall, the degree of occupational stress was indicative of a need for intervention from their institutions. The researcher recommends peer review, self-evaluation, and interventions to increase coping skills and reduce potential negative impacts on the URAs and their employers.

INTRODUCTION

University research administrators (URAs) are crucial employees for universities (Mishler, 1989). They are responsible for the administration of federally sponsored grants and contracts for colleges and universities. In this capacity they administer high-risk and high-accountability grants and contracts that represent large sums of federal dollars. They assume this administration on behalf of their institutions while simultaneously facilitating their institution's research and extramural funding agenda (Anonymous, 1997; Atkinson, 2002; Erickson et al., 2007; Gabriele, 1998; Hansen & Moreland, 2004; Lowry & Hansen, 2001). Their jobs are characterized by constant deadlines, intense competition with other institutions for

federal funds, and ongoing accountability for service to faculty, university administration, auditors, federal sponsors, and, ultimately, the American public who provide the funds given out as federal competitive grants (Erickson et al., 2007). It has been established that like other higher education occupations, URAs experience stress balancing work, home, and a healthy lifestyle (Shambrook, 2007). However, unlike other higher education occupations, there has been no study about whether or not that stress is perceived as a function of their specific occupation. There are no baseline data examining which stressors are reported by this occupation. The Occupational Stress Inventory-Revised (OSI-R) Occupational Roles Questionnaire (ORQ) has often been utilized for

“executive, technical, administrative support personnel”, and types of employees to obtain role stress data (Osipow, 1998). In order to eliminate the lack of data on URA occupational stressors and fill the gap in the literature for this population of educational leaders, this study aimed to administer the ORQ to URAs and obtain baseline data for analysis and further inquiry.

URAs are associated organizationally within their institutions with organizational structures commonly named Offices of: Research Administration, Sponsored Programs, Sponsored Research, and/or University Research Services. These offices are the central location for expertise related to the application for and management of grants. The URAs within those offices are sent demands from multiple entities—the federal government, their own higher education institutions’ administrations, their colleagues, and the faculty and professional staff they serve. All of these demands arrive at varying points along the life cycle of a federal grant or contract (Coverman, 1989; Mishler, 1989). Meeting those demands can be stressful and the way in which URAs perceive the stress associated with their role is associated with higher education administration (Blankinship, 1994). Blankinship summed up the multiple roles and possibly stressful in combination roles of URAs: “... research administration is a dynamic, challenging, and stressful profession. Research administrators play many different roles:

compliance officer, cheerleader, consoler, advocate, and - perhaps the least appreciated role - crisis counselor.”

Other individuals and organizations have further elaborated upon the role of the URA to examine their organizational context and the focus of their work. Hensley (1986) assessed URAs as a subset of higher education administrators and was quoted as defining research administrators as those who “render assistance directly or indirectly to principal and co-investigators,” and included in this group what he called a “heterogeneous work group” including university staff from both the pre-award and post award grant or contract life cycle and all those support personnel in between other than the investigators themselves (Beasley, 1992; Merritt, 1995; Mishler, 1989). After surveying 400 URAs, Eveslage and Shisler (1984) found that they tended to characterize themselves as falling primarily into one of two groups: pre-award, focusing primarily on the activities that are part of proposal preparation prior to the receipt of a grant and/or post-award, focusing primarily on grant and contract management after an award has been received. More recently, Beasley (1992) (also one of the authors of the original micrograph on the role of research administration) evaluated the voluntary professional associations that URAs tend to affiliate with and highlighted the importance of the multiple roles of the URA within higher education. Beasley’s

assessment added to the pre-award-only and post-award-only group to include the more current trend of a third category of URAs—those who are associated with a combined pre- and post-award organizational unit (Atkinson, 2005; Beasley, 1992; Eveslage & Shisler, 1984; Shisler et al., 1987). As URAs are studied, one must consider their roles and the context (both institutional and federal environment) within which they perform their roles (Hansen & Moreland, 2004). The “structural response” to the changing environment in research administration has resulted in various organizational configurations of the pre-award, post-award, or combined research administration office as well as variation in the main unit to which each type of research administration office may substantially report such as academic affairs or a non-academic affairs office (e.g., Finance) (Hansen & Moreland, 2004).

This study explored the following questions:

1. What types of occupational stressors are prevalent in the self-reports of university research administrators?
2. Is the degree or type of role stress influenced by:
 - a. affiliation of their office unit within their institution, or
 - b. type of research administrator?

The Occupational Stress Inventory Revised (OSI-R) utilizes McLean's six types of occupational stress because of its link to occupational role as well as high validity and reliability, and the wide range of employees with which it has been validated. McLean's types of occupational stress are defined as:

1. Role Overload—The extent to which job demands exceed resources (personal and workplace) and the extent to which the individual is able to accomplish workloads.
2. Role Insufficiency—The extent to which the individual's training, education, skills, and experience are appropriate to job requirements.
3. Role Ambiguity—The extent to which priorities, expectations, and evaluation criteria are not clear to the individual.
4. Role Boundary—The extent to which the individual is experiencing conflicting role demands and loyalties in the work setting.
5. Responsibility—The extent to which the individual has, or feels, a great deal of responsibility for the performance and welfare of others on the job.
6. Physical Environment—The extent to which the individual is

exposed to high levels of environmental toxins or extreme physical conditions (Osipow, 1998).

The study was exploratory and analytical in nature. The emphasis was predominantly on quantitative methodology and a randomly selected population. The limitations of the proposed study were related primarily to population and methodology. One factor that limited the study was the ability to generalize to the total population. The intended sample of URAs was a convenience group and members of NCURA. Not all URAs belong to NCURA. Some affiliate with the Society for Research Administrators (which includes more than university-affiliated research administrators), or other practice related groups like the Council on Government Relations, the Council on Undergraduate Research, or the National Association of College and University Business Officers. Some do not affiliate with a membership association at all. Random selection of NCURA members was a convenient means of ensuring that URAs who were engaged in their field were invited to participate, but the sample was not representative of the total population of university research administrators. Rather, it was only able to be generalized to groups similar to the NCURA members.

Two limitations related to methodology. First, because the Occupational Stress Inventory Revised (OSI-R) measured the

extent to which role stress might be experienced by URAs and not the source of that stress, no causal relationships could be proved or inferred from the data collected. Second, there was a risk of social desirability bias because: 1) role stress can only be recorded by self-report, 2) the experience of role stress is individualized and perceptual, and 3) it might have been interpreted by the individual as positive or negative. However, occupational role stress psychologists who have published articles on the validity and reliability of self-report assessments maintain that self-report is currently the best means of obtaining role stress data from a subject due to its very nature. Although there are varying opinions related to which assessments were best for differing types of role stress, all agree that perception of role stress is an individualized psychological process that can only be tapped into via a self-report-based mechanism (Barr, 2005; Biron, Ivers, Brun, & Cooper, 2006; Fiesel, 2006; O'Driscoll & Cooper, 1994; Osipow, 1998).

The electronic admission of the OSI-R to the study subjects involved an e-mail invitation, followed by a web-based OSI-R survey. Although seemingly limited to only those individuals comfortable with e-mail and web-based surveys, URAs engage in extensive use of electronic research administration methods by the federal government which allowed the researcher to determine that they would be well versed in the use of e-mail, listservs, electronic

databases, as well as web-based interfaces in order to perform their duties.

Additionally, NCURA and SRA, with which many if not all targeted respondents affiliate, use electronic means extensively to interact with their memberships. Care was taken to ensure that the web-based survey service used was generally user-friendly and no more complicated than those services already in use by URAs.

Lastly, one aspect of self-report methodology for measurement of occupational stressors that was unavoidable is that individuals do not necessarily attribute the stress they feel to their occupations. One criticism of the basis for most inventories of occupational stress in terms of person-environment fit theory is that individuals' self-perceptions are not always accurate. For example, in a study looking at the occupational role stressor of environment, employees self-reported stressors associated with a "sick" building, which after investigation was determined not to be "sick" at all but the self-reports of the employees identified the wrong source regardless (Lees-Haley, 1993). Also, according to Barling et al., some individuals are simply more prone to stress and therefore, alternately, are more likely to report feeling stressors in general (Barling, Kelloway, & Frone, 2006).

RESEARCH METHODOLOGY AND DESIGN

Sampling

NCURA has over 6,000 members employed at institutions of higher education and teaching hospitals. The inclusion criteria consisted of self-identification as a URA and NCURA member combined with confirmation that they concurrently identified themselves as working for an office of sponsored programs or other similarly purposed university or teaching hospital unit. The survey administration method was via a direct e-mail to participate in an on-line web survey service that enabled the survey to be completed anonymously.

In his analysis of occupational stress data, Barr (2005) found that the presence of occupational stress was a factor in non-response to organizationally-based surveys and that occupational role stressors like role overload, high role ambiguity, and low locus of control were correlated with non-response. In an attempt to control for this effect, potential respondents were provided with a URL that could be accessed from any setting so that they had the option of completing the survey in a non-occupational setting by forwarding the invitation to their home e-mail addresses.

Measures

The assessment administered was the Occupational Roles Questionnaire (ORQ) portion of the Occupational Stress

Inventory-Revised (OSI-R). The current version of the OSI-R is appropriate for ages 18 years and older and provides normative data for both gender and specific occupational categories (i.e., executive, professional, technical, administrative support, etc.) which is comparable to the sample population. The ORQ consists of six scales, with ten items per scale, including: role overload (RO), role insufficiency (RI), role ambiguity (RA), role boundary (RB), responsibility (R), and physical environment (PE). According to Osipow (1998) these six scales are based upon McLean's (1975) set of six occupational stressors. Because URAs are unlikely employed in extreme physical environments in their university setting or teaching hospital, the sixth scale was not utilized. The generic profile form was used and compared with the *T* scores of the total normative sample since the internal consistency analysis was conducted with the normative sample. Utilizing a Likert scale, items provided respondents with the ability to rank statements as follows from: 1) rarely or never true, 2) occasionally true, 3) often true, 4) usually true, to 5) true most of the time (Osipow, 1998).

Procedures

Utilizing direct e-mail, the researcher extended an invitation to the URAs who

comprised the random sample to participate in a survey on occupational role stressors related to university research administration. The researcher made reference to the previous stress survey (Shambrook, 2007) which indicated that the URAs surveyed reported experiencing stress both at home and at work and where those two intersect with each other. The sample was invited to further explore this issue to determine what (if any) stress they might experience as a URA by examining only their occupational experience. Although this was not directly addressed in their invitation, the sample was asked for additional information—type of URA in their organization (pre-award, post-award, combined pre- & post-award, or other) and the type of unit to which they were organizationally affiliated (academic, administrative, or other)—to determine if there were any differences among the commonly recognizable groups internal to the occupation. Because the scope of sponsored programs at institutions of higher education and teaching hospitals widely varies, data were collected to determine what type of university research administrator they consider themselves in order to further clarify their responses. The data matrix utilized to organize the anticipated data is offered below.

Table 1
Data Matrix

Stressor	Academic Affairs				Administrative Affairs			
	Pre	Post	Comb.	Other	Pre	Post	Comb.	Other
Role Ambiguity (RA)								
Role Overload (RO)								
Role Insufficiency (RI)								
Responsibility (R)								
Role Boundary (RB)								

Additional items added to the questionnaire included:

- 1) Do you consider yourself a pre-award, post-award, combined pre-and post-award or other type of research administrator?
- 2) What is the title of the university employee that you report to?
- 3) What is your job title?
- 4) What is the title of your organizational unit or office?
- 5) Does your organizational unit report to academic affairs, administrative affairs, or another unit within your institution?
- 6) How many years have you been a university research administrator?

Via three similarly named e-mail addresses the researcher invited 499 random individuals per e-mail address to participate in the survey. This was done a second time one week later to allow the researcher to get a sense of the percentage of bounce-back to expect. The target number of invitees was 3,000 in total. Because some e-mails bounced back or were likely to have been filtered by institutional

fire walls, 3,000 invitee e-mails is not equal to 3,000 who actually received e-mail invitations. Therefore, an accurate response rate cannot be calculated; rather, an approximate response rate of (assuming 15% attrition due to lost e-mails) 17.88% was yielded. The survey was available via the on-line web survey service from March 17, 2008 through May 31, 2008. At the end of the four weeks the survey was closed so that the results could be analyzed.

Once the data were collected and downloaded from the web service, utilizing SPSS the researcher used descriptive statistics to analyze the data. The data were scored and grouped according to the data matrix; measures of central tendency were derived. Correlations were used to assess the relationships between and among the stressors and to inform the researcher's view of patterns as the reports of the types of URAs and the role stressors they experienced in relationship to their characteristics emerged (Schloss & Smith, 1999). The overall group was finally compared to the normative sample provided by the OSI-R instrument.

As a researcher who is also a university research administrator, the first study, which assessed potential occupational role stressors of URAs, had to be quantitative so the data could not be directly influenced by researcher bias. However, having a URA as the researcher conducting the study is consistent with other research administration literature and its self-reflective tradition. Collecting additional information about the groups of research administrators and their unit's university affiliation provided data that had the potential to make the incidence of stressors meaningful to not only the total group but also to the specialized groups within the occupation.

The survey instrument was entered into the on-line survey website SurveyMonkey.com, as was the required PAR licensing agreement language "Items 7-77 are adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Occupational Stress Inventory -Revised by Samuel H. Osipow, Ph.D., Copyright, 1981, 1983, 1987, 1998 by Psychological Assessment Resources, Inc." Further reproduction was prohibited without permission from PAR, Inc., which specified that no copies could be made of the instrument. Based upon the licensing agreement, a copy of the instrument is not provided with this article. The six

additional questions preceded the scales provided by the ORQ.

The results were analyzed using a combination of Microsoft Excel spreadsheet software and SPSS statistical software. The six additional questions pertaining specifically to the type of URA and institutional configuration within which they worked were considered nominal variables. The items from the individual scales of the OSI-R ORQ were considered ordinal variables. Each scale within the ORQ was scored individually and the scales were not totaled because each measured a different occupational stressor; therefore, an aggregate or sum total score would not provide any useful information. Only the respondents who completed all ten questions of a scale were included in that scale's data set.

RESULTS OF ANALYSIS

Sample Characteristics

Although 482 respondents began the survey, 456 surveys were fully completed by the day the survey was closed and were utilized for the scale data analysis. All respondents who completed the first six questions were utilized to form a picture of the population of URAs because even if they did not complete the survey they did reflect a subset of the main population that had been randomly selected. Table 2 details the frequency of the responses to the six additional questions and the categories with which the respondents self-identified.

Table 2
Characteristics of Study Respondents

Characteristic	f	%
Type of URA (N= 482)		
Pre-Award	85	17.6
Post-Award	80	16.6
Combined Pre- & Post-Award	258	53.5
Other	59	12.2
Office Affiliation (N= 456)		
Academic Affairs	126	27.6
Administrative Affairs	118	26.1
Other* 211	46.3	
Number of Years Experience (N= 482)		
1–5	165	34.2
5–10	123	25.5
10–15	70	14.5
15–20	67	13.9
20+	57	11.8

Key= **bold** indicates most frequently occurring result

*Of the other category for office affiliation: 169 were academic affairs, 29 were administrative affairs, and 14 were unclassified.

The types reported and the number of years of experience was consistent with the literature. However, in response to the question, "Does your organizational unit report to academic affairs, administrative affairs, or another unit within your institution?" the majority picked "other", which was not expected. The literature suggests that most URAs are affiliated with either academic affairs or administrative affairs (Davis, 1991; Eveslage & Shisler, 1984; Shisler et al., 1987). The researcher considered the possible explanations for this to be: 1) the respondent wanted to utilize the text response option of "other" to provide greater detail, 2) the academic or administrative classification did not apply, or 3) the respondent did not feel that their

affiliation was a clear fit for either academic affairs or administrative affairs. The data revealed that 43.7% of the "other" URA respondents were executive-level academic leadership employees who did not identify as either administrative affairs or academic affairs but a separate category within their institution. The second largest category was the combined category where 18.6% of the sample considered themselves a combination of the two areas. After further examining the text-based answers, the researcher reclassified the respondents with the following types of text-based answers to either academic affairs or administrative affairs as follows.

Administrative Affairs

- ❖ Advancement—The office unit to which the URA reports was affiliated with a university foundation, development office, or institutional advancement.
- ❖ Finance and Business—The office unit to which the URA reports was affiliated with a higher education business, accounting, or financial office.
- ❖ Medical School Administration—The office unit to which the URA reports was affiliated with a medical school's finance, accounting or business administration office.

Academic Affairs

- ❖ Academic Leadership—The office unit to which the URA reports was affiliated with an academically oriented administrative office, dean's office, college administration, or academic department administration.

- ❖ Chief Academic Officers—The office unit to which the URA reports was affiliated with a president's office, provost's office, chancellor's office, or a vice presidential-level academic or research office.
- ❖ Research—The office unit to which the URA reports was affiliated with a sponsored programs office, research unit, or a research center.

All other respondents who did not fit into the above description remained unclassified as working for an office affiliated with either academic or administrative affairs. Table 3 represents the breakout of participants in the study after reclassification. The resulting breakout is consistent with the literature on university research administration.

Table 3
Types of Other Respondents

Characteristic	<i>f</i>	%
Office Affiliation (N= 456)		
Academic Affairs	295	65
Administrative Affairs	147	32
Other*	14	3

Key= **bold** indicates most frequently occurring result

Respondents were also asked their job title and their supervisor's job title. These data were text-based and for the purpose of this study collected to allow for future, more detailed study into the organizational

trends in university research administration titles and functions as well as to provide potential reference points against which to compare other responses.

Occupational Roles Questionnaire (ORQ)

The six scales to the ORQ correspond to the six types of occupational role stressors. The first five scales are pertinent to this study of university research administrators. Although administered as part of the ORQ, the last scale of the ORQ, Physical Environment (PE), is not directly germane to this study because university settings are typically not extreme environments. By definition, research administrators who are at a university are likely in a typical university office setting with a controlled

environment. The majority of respondents also skipped the items in this scale.

For all scales, the T scores of the population of respondents were compared to the normative sample T scores for the sake of comparison and to interpret the respondent's scores. The normative sample's scores had a mean of 50 and a standard deviation of 10 and the normative sample was based upon a diverse pool of applicants in various occupations, ages, and educational levels (Osipow, 1998). The interpretive guidelines were based upon the linear scale scores of the normative sample as shown in Table 4.

Table 4
ORQ Interpretive Guidelines

T Scores for Normative Sample

70T+	indicate a strong probability of maladaptive stress, debilitating strain, or both
60–69T	suggests mild levels of maladaptive stress and strain
40–59T	are within one standard deviation of the mean and should be interpreted as being within the normal range
40T–	indicate a relative absence of occupational stress or strain

(Source: Osipow, 1998)

The means of the T scores for the whole population of 456 URAs when compared to the normative sample revealed two means that fell into a range which suggested mild levels of maladaptive stress and strain. Role ambiguity (RA) had a mean of 70 and role overload (RO) had a mean of 65. The results

for role insufficiency (RI), role boundary (RB), and responsibility (R) were unremarkable and fell within one standard deviation of the normative sample's median and therefore fell within the normal range as shown below in Figure 1.

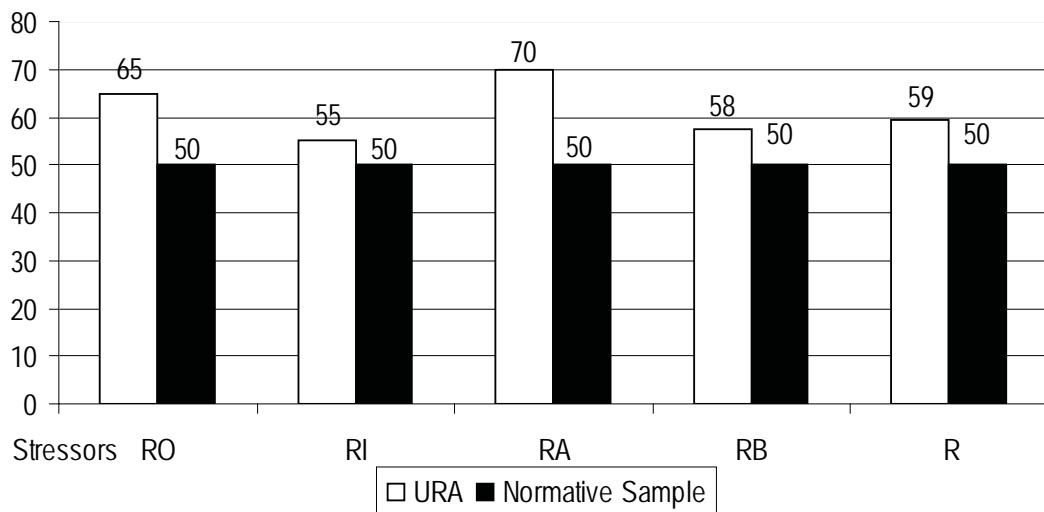


Figure 1. Comparison of URAs Scores to Normative Sample (Created by Researcher)

According to the interpretive guidelines in Table 4, the group mean score of 70 indicated "a strong probability of maladaptive stress, debilitating strain, or both." The researcher compared the T-score (hereafter referred to as score) means of various groupings from the study sample to determine what degree of variation might be present in the population and if there were factors which increased the score to over 70. The results indicated that the types of occupational stressors in the URAs sample which were prevalent were RA and RO and at higher levels than the normative sample. The stressors of RI, RB, and R were within the normal range but still at higher levels than the average employee in the normative sample. Having data that addressed research question number 1, the researcher looked to the types of URAs in the sample population and their organizational affiliation to determine if any variance by

group or if there were any relationships between different groups and URAs characteristics which influenced the level of RA or RO was present. The researcher further examined that portion of the sample that reported 70+ levels of occupational stress.

Type of Research Administrator

As shown in Table 5, respondents who identified themselves as "post-award" research administrators or "other" research administrators had the highest scores for RA with means of 71 and 71, respectively. The second highest set of means for the sample were for RO with means ranging from 62 for post-award URAs to 66 for those who identified themselves as other URAs. URAs in all types reported mild levels of RO. Pre-award and combination URAs reported mild levels of RA. RE was a mild stressor for URAs who labeled themselves as other.

Table 5

ORQ Scales Means of Scores by Type of URA

Type of URA	Occupational Role Stressors				
	(RO) Overload	(RI) Insufficiency	(RA) Ambiguity	(RB) Boundary	(RE) Responsibility
Pre-Award N=84	64	56	69	58	55
Post-Award N=70	62	56	71	57	56
Combination N=250	65	57	70	59	59
Other N=52	66	58	71	59	61
Total N=456	65	57	70	58	58

University Affiliation of URA Office Unit

As shown in Table 6, all respondents, with all manner of office affiliations within their institutions, reported a maladaptive

level of stress, with each category having a mean score of 70. The second highest set of mean scores fell within the mild level of maladaptive stress range for RO.

Table 6

ORQ Scales Means of Scores by Affiliation

URA Office Unit Reports to:	Occupational Role Stressors				
	(RO) Overload	(RI) Insufficiency	(RA) Ambiguity	(RB) Boundary	(R) Responsibility
Academic N=123	64	57	70	58	57
Administrative N=113	65	57	70	58	58
Other N=197	65	57	70	59	58
Total N=433	65	57	70	59	58

Years of Experience as a URA

As shown in Table 7, respondents who identified themselves as being in the 5–10, 15–20, or the 20+ years of experience group had the highest scores which suggested a high level of maladaptive RA stress. All other years of experience indicated mild levels of RA as well. Mild levels of RO were

also indicated in all categories of years of experience with 20+ being the highest score at 68. The data shift from mildly maladaptive in years 1–5 to within the high, maladaptive range in the year 10–15 group back down again for the 15–20 group, and finally up again for 20+.

Table 7
ORQ Scales Means of Scores by Years of Experience

Occupational Role Stressors					
Years of Experience	(RO) Overload	(RI) Insufficiency	(RA) Ambiguity	(RB) Boundary	(R) Responsibility
1-5 N=153	62	56	69	58	54
5-10 N=116	65	58	71	59	58
10-15 N=68	67	57	60	60	62
15-20 N=66	67	59	72	58	60
20+ N=53	68	58	70	58	62
Total N=456	65	57	70	58	50

Correlations among the Five ORQ Stressors for URAs

Among the five types of occupational stress included in the analysis were the correlations that could be expected as stress correlates with stress in general. There were positive correlations among them, with Role Ambiguity (RA) having the strongest

correlation [.445 significant at the 0.01 level (2-tailed)] with Role Overload (RO), meaning that the higher the incidence of one, the higher the incidence of the other will be. RA was also positively (.131) correlated with RB and positively (.185) correlated with R. Both were also significant at the 0.01 level (2-tailed).

Table 8
Correlations among ORQ Scales of Occupational Stressors for URAs

Stressor	N =456	RO	RI	RA	RB	R
RO	Pearson Correlation Sig. (2 Tailed)	1.000	0.250 0.000	-0.036 0.445	0.350 0.000	0.578 0.000
RI	Pearson Correlation Sig. (2 Tailed)	0.250 0.000	1.000	0.462 0.000	0.226 0.000	0.285 0.000
RA	Pearson Correlation Sig. (2 Tailed)	-0.036 0.445	0.462 0.000	1.000	0.071 0.131	0.062 0.185
RB	Pearson Correlation Sig. (2 Tailed)	0.350 0.000	0.226 0.000	0.071 0.131	1.000	0.398 0.000
R	Pearson Correlation Sig. (2 Tailed)	0.578 0.000	0.285 0.000	0.062 0.185	0.398 0.000	1.000

Data in **bold** indicate a correlation significant at the 0.01 level (2-tailed).

The data provided answers to the research questions. As shown in Figure 1, the types of occupational stressors most prevalent in the self-reports of URAs were RA and RO. RA was in the range that would indicate the high levels of maladaptive stress that might lead to psychological strain. RO was in the range that might indicate mild levels of maladaptive stress. All other stressors (RI, RB, and R) fell within the average to normal range. As shown in Tables 3–5, the degree or type of role stress reported was not notably influenced by affiliation of their office unit within their institution, their type of URA, or even their years of experience as a research administrator as those scores were consistent across groups.

Overall, the URA sample of 456 respondents reported higher scores on all scales of the ORQ than the normative sample provided by the instrument. As shown in Figure 1, the mean scores for all scales of the ORQ for the URA sample ranged from between 5 to 20 points higher than the normative sample. Approximately 68% of the normative sample reported occupational stress levels within the 40–59 “average to normal range” occupational stress for all stressors or were within one standard deviation of their mean of 50. Comparatively, the URA sample had mean scores for all scales of the ORQ which ranged from 55 to 70, indicating that 68% of the URA sample reported from mild to

maladaptive levels of occupational stress or psychological strain as compared to 2% of normative sample. Based upon the results of the study, URAs experience higher than normal occupational stress and that stress is not linked to the individual characteristics of the type of URA, the affiliation of the office they work for, or their years of experience in the field.

SUMMARY OF FINDINGS

There were three main findings related to the incidence and types of occupational stressors among URAs set within the context of their organizational structure, their type, and years of experience.

1. The respondents revealed that the types of occupational stressors that were most prevalent were RA and RO and those were reported at higher levels than the normative sample. RA was at a level which indicated a high probability of maladaptive stress and/or debilitating strain and RO was at the level which indicated mild levels of stress and strain.
2. The respondents revealed that the occupational stressors of RI, RB, and R were in evidence within the average range for stress but at a higher level than the normative sample even though they were the three least prevalent of the URA sample.
3. The results showed that the types of URAs in the sample population, their

organizational affiliation, and years of experience did not influence the type or incidence of the occupational stressors reported. In fact, the URA sample had consistent responses regardless of affiliation, type, or years of experience.

Discussion of Findings

Hansen and Moreland (2004) provided a means of understanding the focus of URAs and their concept of the Janus-faced URA begs the question of whether or not having a Janus-faced role is occupationally stressful. The Janus-face concept embodies the nature of the changes in the field of research administration as a result of multiple responsibilities and increasing levels of compliance that make it challenging to be a facilitator of the research process at the same time. Citing Hanson and Moreland's "structural responses" to these challenges the researcher included survey questions related to office unit affiliation in order to gain a perspective on the types of structures to which the different types of URAs report (Hanson & Moreland, 2004). The findings conclusively indicated two high levels of occupational stressors RA and RO, and three lower levels of the occupational stressors RI, RB, and R.

Because the scores are for a group of anonymous URAs, for the purpose of generalizing to the larger NCURA population of URAs as opposed to individuals the researcher could follow up with directly, the literature was the source of interpretation of the results. The

literature was reviewed in relation to the characteristics of the occupational stressors found to be prevalent in the URA population and formed the basis for the conclusions drawn.

Finding 1

Role Ambiguity

According to Osipow (1998), respondents who have high scores on RA may report an unclear sense of: a) "what they are expected to do," b) "how they should be spending their time," c) "how they will be evaluated," and d) "where to begin on new projects." Additionally, they may: e) "experience conflicting demands from supervisors" and f) "have no clear sense of what they should do to get ahead." The extremely high scores for URAs indicated the seriousness of the level of RA within the URA sample and signified the need for attention to the problem.

Atkinson's (2005) primer on scientific self-regulation for institutions of higher education and teaching hospitals indicated that the traditional role of the URA as a partner with the faculty was being blurred by the addition of compliance requirements and greater university policy accountability. Collinson's study of URAs in England (whose occupation mirrors that of American URAs) found that URAs there were in roles that were simultaneously administrative and academic. They reported experiencing a lack of a consistent perception of their role by the faculty or their academic counterparts than the perception they had

of themselves. She described this type of role ambiguity as being ameliorated by a coping mechanism she called "occupational identity work" (Collinson, 2007). Job stress authors cite the need for interventions to improve coping mechanisms to reduce occupational stress as a necessary step (Bowden, 2000; O'Driscoll & Cooper, 1994). The phenomena of varied perceptions of the research administrator can be seen in the reflective literature from 1998 to the present in articles written to define or characterize the specific role of the current field and of the profession of research administration. These articles are offered as education for URAs as well as the institutions they are employed by (Atkinson, 2002, 2005; Collinson, 2004, 2007; Erickson et al., 2007; Gabriele, 1998; Hansen & Moreland, 2004; Lowry & Hansen, 2001). This is consistent with a high degree of uncertainty about what their institutions expect of them, how they will be evaluated as a result of their work, and by what means they should be promoted. If there was a common understanding of the profession, then the articles would be unnecessary and not resonate with their audience or peer reviewers. The cited researchers went on to point out the extreme difficulty of meeting all demands in the current climate of federal accountability while facilitating research—this is consistent with a characteristic of multiple demands upon an occupational role leading to RA (Fried, Ben-David, Tiegs, Avital, & Yeverechyahu, 1998).

Role Overload

According to Osipow (1998), respondents who have high scores for RO on the ORQ may "describe their work load is increasing, unreasonable, and unsupported by needed resources." Also, "they may describe themselves as not feeling well trained or competent for the job at hand," or "needing more help" and/or "working under tight deadlines." Descriptions of the profession of URAs include recognition of increasing workload to the regulatory environment and tight deadlines are an intrinsic part of the nature of the job (Kirby, 1992; McKenzie, 1988; Miner et al., 2003; Stockton & Krebs, 1976). There was no evidence in the literature that URAs describe their workload as unreasonable or lacking in funding to provide their services but constant training is emphasized as a result of the increase in electronic research administration, regulatory compliance, and increased fiscal liability of federal grants ("About us," 2007; Erickson et al., 2007; NCURA, 2007). Reports of mild levels of maladaptive stress or psychological strain from URAs may signify a shift towards URAs' feeling that they cannot keep up with the pace of professional development needed to succeed in the profession. If so, this is a key indicator for burnout which leads to a reduction in employees' institutional commitment according to some of the occupational stress literature (Northwestern

National Life Insurance Company, 1992; Siefert et al., 1991).

Finding 2

Occupational Stressors Higher than Normative Sample

Although the respondents to the URA survey reported the occupational stressors of RI (55), RB (58), and R (59) within the normal to average range (40–59), their scores were still higher than the normative sample mean of 50. Because RA, the highest reported stressor, is positively correlated with RB (0.131) and R (0.185), significant at the 0.01 level for our population, the researcher concludes that these results are consistent with a higher score for RB and R than the normative sample. The higher URA sample mean of RI (55) as compared to the normative sample (50) cannot be linked to the higher RA or RO scores which may be related to the fact that it is the lowest occurring stressor of the group.

Finding 3

Consistency of Report Regardless of Affiliation, Type, or Years

URAs are employed at a wide variety of institutions ranging from primarily undergraduate institutions (PUIs) to large-scale research universities and even teaching hospitals but the results indicate that they share a common experience of their profession no matter at which point they enter the grants process. This evidence is found in the consistency of scores and the absence of major shifts in the data as a result of characteristic factors. Despite

Hansen and Moreland's (2004) "structural response" to the increasing role of URAs, the affiliation of URAs' office units did not change the consistency of their responses to the ORQ. Furthermore, individual characteristics such as type of university research administrator or years of experience influence those results as shown in Tables 5–7. Due to consistency in the level of occupational stress, these results signify that there would also be common coping mechanisms that would manage the potential negative effects of the various occupational stressors.

CONCLUSIONS AND RECOMMENDATIONS

Two major conclusions emerge from the findings of this study.

1. URAs as a whole are under high levels of occupational stress, indicating a need for intervention. According to Osipow's (1998) stress, strain and coping model as well as Fogarty et al.'s model which incorporates organizational variables (those an institution of higher education or teaching hospital may influence), intervention is necessary and the degree of strain should be the determinant of the degree of intervention.
2. Occupational stress has negative impacts on employers as well as employees (Reidar et al., 2005; Walter

& Gordon, 1998); this study has shown that URAs share a common experience of their profession's stressors as evidenced by the consistency of their results. Also, the nature of RA is such that there is evidence of potential misperceptions between employer and employees or employees and coworkers; therefore, both URAs themselves as the common denominators as well as their institutions need to be involved in the selection of interventions.

Overall, the high levels of RO and RA and the generally higher than normative group levels for other stressors indicate the importance of occupational stress as an important factor in university research administration. Research is integral to the nature of university and teaching hospital life; this study has shown that the employees who facilitate that process are experiencing maladaptive levels of stressors and/or psychological strain. Therefore, the negative impacts of occupational stress are already impacting those universities and teaching hospitals.

This study was conducted to both fill a gap in the literature on occupational stress for URAs as well as to provide insight into the nature of what is essentially a problem universal to all employees as it relates to this specific profession. Knowing the incidence and types of stressors that a particular group of employees experience

allows for interventions to be considered to increase coping and to reduce psychological strain (Fogarty et al., 1999). The two recommendations that emerge as a result of this study include self-evaluation and peer review.

1. URAs know the challenges that they face as a profession with emerging demands and shifting perceptions of what they need to meet those demands. They need to recognize the common experience they share and engage in self-evaluation as well as profession-wide evaluation of those occupational stressors which are most prevalent: role ambiguity and role overload. Armed with this information, they will be better able to meet the demands of their occupations while accruing coping skills matched to the stressors they most experience.
2. Institutions of higher education and teaching hospitals are academically oriented and based upon traditional academic values. The research administrators within their employ operate in an environment that is a hybrid of both the academic and business or regulatory arenas. The URAs in their offices of sponsored research are essentially unique employees and the interventions that might work for traditional higher education administrators may or may not work to alleviate occupational

stress as found in this study among URAs. Institutions should provide resources to allow for URAs to engage in peer review processes to alleviate continuing role ambiguity. This could occur informally, for example, within a consortium of their colleagues at other similar institutions, or formally availing themselves of peer review provided by recognized professional organizations within the profession. Being more open to learning from URAs about the occupation itself and the expectations an institution may

have of its URA employees should be an ongoing dialogue in concert with changes in the needs of the institution itself and the regulatory environment within which its research process takes place.

In conclusion, by sharing responsibility for limiting occupational role stressors and their impacts, higher education and its research administration employees will be able to take steps to improve outcomes for both employer and employee.

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ABOUT THE AUTHOR

Christine Katsapis has a Ph.D. in Education from American University and currently serves as the Assistant Dean for Research at Gallaudet University. Gallaudet University is the world leader in liberal education for deaf and hard of hearing students. It has an international reputation for its outstanding programs and the research it conducts on the history, language, culture, and other topics related to deaf people. Dr. Katsapis has been at Gallaudet for 15 years, primarily with the Office of Sponsored Programs communicating primarily in American Sign Language (ASL). A member of NCURA since 1996, Dr. Katsapis was in the Leadership Development Institute Class of 2005 and has since served on regional- and national-level committees. She just concluded serving on the national Professional Development Committee and recently joined *Research Management Review*'s editorial board. Dr. Katsapis' research areas include university research administration, federal evaluation of educational institutions, and occupational role. She is a 2009 recipient of the American Association of University Administrators' Donald A. Gatzke Dissertation Award.
